**Supplementary Figure 14.** *Phallusia mammillata.* Single cell analysis of trunk lateral cell lineage. A7.5 is marked red in the schematic 3D-representation in the top row. Rows with Nomarski images show changes in cell position in different numbers of consecutive generations, starting with 1 in the first image of the column. Lower schematic 3D-representation shows descendants of A7.5 at 10h, 6min after fertilization at 18 °C. In all images the trunk of the embryo is oriented as depicted in the axis-orientation labels in the upper left of the figure, unless specified in the respective image. a – anterior, an – animal, d – dorsal, l – left, p – posterior, r – right, v – vegetal, ve – ventral.

A higher resolution version of this figure is hosted on MorphDBase at: www.morphdbase.de/?T_Stach_20151119-M-71.1